

EXHIBIT B

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**FINAL REPORT ON
PRICE MANIPULATION IN WESTERN MARKETS**

**FACT-FINDING INVESTIGATION OF
POTENTIAL MANIPULATION OF
ELECTRIC AND NATURAL GAS PRICES**

DOCKET NO. PA02-2-000



**Prepared by the Staff of the
Federal Energy Regulatory Commission**

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Executive Summary

Overview

This Report is the culmination of a yearlong effort by Commission Staff to determine whether and, if so, the extent to which California and Western energy markets were manipulated during 2000 and 2001. While Staff found significant market manipulation, this evidence does not alter the Commission's original conclusion, set forth in its December 15, 2000 Order, that significant supply shortfalls and a fatally flawed market design were the root causes of the California market meltdown.

The underlying supply-demand imbalance and flawed market design greatly facilitated the ability of certain market participants to engage in manipulation. In addition, the ability to pass through gas prices in electric power prices provided no check on gas buyers' willingness to pay.

For the first 2 years of its operation, the California market performed well and saved the state's customers billions of dollars. Only after the Pacific Northwest could no longer provide abundant supplies of low-cost hydropower to the regional market did the negative effects of too little infrastructure and poorly designed market rules adversely affect customers' bills.

A key conclusion of this Report is that markets for natural gas and electricity in California are inextricably linked, and that dysfunctions in each fed off one another during the crisis. Spot gas prices rose to extraordinary levels, facilitating the unprecedented price increase in the electricity market. Dysfunctions in the natural gas market appear to stem, at least in part, from efforts to manipulate price indices compiled by trade publications. Reporting of false data and wash trading are examples of efforts to manipulate published price indices. This Report makes recommendations for conditions the Commission should impose to ensure that price indices represent better barometers of actual prices.

In a related finding, Staff concludes that large-volume, rapid-fire trading by a single company, in what was incorrectly assumed to be a liquid market, substantially increased natural gas prices in California. To compensate for this, Staff reiterates the recommendation of its August 2002 Initial Report, which called for the Commission to alter the natural gas pricing methodology employed in the California

**Chapter II: Topock Was
Illiquid—A Single Company
Substantially Increased
Prices**

In this chapter, we conclude that Reliant engaged in a high-volume, rapid-fire trading strategy to purchase its physical spot gas needs at Topock. Reliant often bought and sold many times its needs in quick bursts, which significantly increased the price of gas in that market. We describe this as “churning” and define its characteristics later in the chapter. We use this term even though it has other connotations in securities or futures trading because it gives the best visual image of Reliant’s behavior. Reliant’s churning enabled it to reduce the overall cost of the gas it actually needed. Through its churning, Reliant profited by selling gas at or near the top of the price climb it caused. Reliant was often such a large presence at Topock (e.g., for the 3-month period from December 2000 to February 2001, nearly 50 percent of the spot gas trades at Topock on EOL were with Reliant) that its trading strategy moved the entire market price. Our analysis shows that the price of gas would have been lower by about \$8.54/MMBtu in December 2000 and by about \$1.69/MMBtu over the 9 months of the California Refund Proceeding absent Reliant’s churning. These inflated gas prices significantly influenced index prices and the clearing prices paid by most California wholesale buyers for spot power.

Staff concludes that these gas prices are not the result of competitive conditions and would not produce just and reasonable electric prices in the California Refund Proceeding. In Chapter IV of this Report, we recommend alternative gas prices for the Commission’s consideration in the California Refund Proceeding.

Recommendations To Amend Gas Marketing Certificates and Generic Proceeding

Reliant’s churning did not violate the blanket certificate under which it sold gas because Section 284.402 of the regulations contains no explicit guidelines or prohibitions. We recommend that Sections 284.284 and 284.402 of the regulations be amended to provide explicit guidelines or prohibitions for trading natural gas under Commission blanket certificates. We also suggest a generic proceeding to develop appropriate reporting and monitoring requirements for sellers of gas under Commission certificates.

**Chapter III: Traders
Attempted To Manipulate
Price Indices Through False
Reporting**

Market participants provided false reports of natural gas prices and trade volumes to industry publications. These publications used the reports to compile price indices, and false reporting became epidemic. Five major traders (Williams, Dynegy, AEP, CMS, and El Paso Merchant Energy) have admitted that their employees falsified information provided to *Gas Daily* and *Inside FERC*, the most influential and relied-upon compilers of natural gas price indices. The false reporting included fabricating trades, inflating the volume of trades, omitting trades, and adjusting the price of trades.

The predominant motives for reporting false information were to influence reported gas prices, to enhance the value of financial positions or purchase obligations, and to increase reported volumes to attract participants by creating the impression of more liquid markets. Market participants that sold power in California, or that were affiliated with such sellers, also had incentives to manipulate reported prices because the clearing price set for power was based, in part, on natural gas spot prices.

Many traders acknowledged that false reporting was done openly in the industry. Some traders believed that the periodicals that prepared the indices were able to distinguish between fictional and accurate reports, but the Staff was unable to confirm that the periodicals could discern fictional trades and eliminate them from the index calculation. The widespread false reporting led Staff to conclude that reported prices did not reliably reflect market activity and, accordingly, that reported prices should not provide the basis for setting spot power clearing prices in the California Refund Proceeding.

Recommendations for Changes in the Reporting Process

Staff recommends various changes to the price reporting process. These changes will eliminate the ability and incentive of those reporting the data to manipulate the indices and will improve the price calculation methods.

- ◆ Only data that can be audited and verified by the Commission or other agencies can be used to construct the natural gas or electric price index.

- ◆ Coral
- ◆ CMS
- ◆ Sempra Energy Trading

At a minimum, these companies need to show the following:

- ◆ Those employees, including trading desk heads and managers, who participated in manipulations or attempted manipulations of the published price indices have been disciplined.
 - ◆ The company has a clear code of conduct in place for reporting price information.
 - ◆ All trade data reporting is done by an entity within the company that does not have a financial interest in the published index (preferably the chief risk officer).
 - ◆ The company is cooperating fully with any government agency investigating its past price reporting practices.
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**Chapter IV: Spot Gas Prices
Were Not the Product of a
Well Functioning
Competitive Market—They
Should be Replaced for the
California Refund
Proceeding**

In this and previous chapters of this Report, Staff concludes that California spot gas prices were artificially high due to market dysfunctions, illiquidity, misreporting, and a rupture causing an abnormal pipeline capacity shortage. The spot gas prices reflected extraordinary basis differentials that far exceeded the cost of transportation and reached levels that would never have been sustained in a competitive market. While some portion of these price levels reflected legitimate scarcity, we cannot calculate the portion attributable to scarcity alone. These inflated gas prices were used in the California Refund Proceeding to compute clearing prices for the entire electric spot power market. While there is no way to precisely replicate the level that spot gas prices would have reached in a competitive market, Staff recommends the use of producing-area prices plus transportation as a proxy for competitively derived gas prices in computing the market-clearing prices in the California Refund Proceeding. Over the 9-month refund period, Staff's proposal would reduce gas costs used in the refund formula by \$7.03 in

southern California and \$4.18 in northern California, or about \$5.60 on average.

Many generators paid these distorted gas prices and fundamental fairness dictates that they be able to recover these costs. Accordingly, Staff also recommends that generators be made whole for the spot gas prices they paid, but that this recovery be on a dollar-for-dollar basis and not part of the market-clearing price.

Staff's proposal would increase the level of the refunds for California.

**Chapter V: Spot Power
Prices Adversely Affected
Long-Term Power Prices**

The vital link between the spot price and forward price for a commodity is the ability to store that commodity. In essence, someone can meet future needs by purchasing the commodity now and storing it for future consumption. As a result, the forward price that someone is willing to pay will approximate the cost of purchasing plus the carrying cost involved with stockpiling. Since the feasibility of storing electricity is very limited, we would expect to see little or no relationship between spot electric prices today and the forward price of electricity. Instead, forward prices should mostly reflect a buyer's expectations of prices in the future. Since natural gas is the marginal fuel in the West, forward gas prices should, in large part, explain forward power prices. Our analysis shows, however, that forward power prices negotiated during 2000–2001 in the western United States were significantly influenced by the then-current spot power prices. This tells us that the trauma of the dysfunctional spot power prices at that time so influenced buyers that they placed great weight on these prices in forming future expectations. The influence of spot prices on forward prices was the greatest for forward contracts with the shortest time to delivery (1-2 years) and varied by location. While Staff has found a statistically significant relationship, the magnitude of the impact is limited (that is, the impact of spot power prices on long-term power prices is clearly not dollar-for-dollar). Rather, a reduction of about one-third in the price of a 2-year forward contract would require a finding that spot power prices were three times above the just and reasonable level.

**Developments in the
Investigation Since
August 13, 2002**

Since the Initial Report was issued, five companies (Dynergy, AEP, Williams, CMS, and El Paso) have admitted that their employees provided false data to the Trade Press.² On December 2, 2002, the Office of the United States Attorney in Houston indicted a former vice president of El Paso Energy on charges of false reporting and wire fraud in connection with his reporting of false trades to *Inside FERC* on November 30, 2001. These false trades were to be part of the calculation for the December 2001 monthly price index for the Sumas trading point at the U.S.-Canada border.

On December 18, 2002, the CFTC announced that it had reached a \$5 million settlement with Dynergy and West Coast Power LLC. The settlement stated that Dynergy had “knowingly submitted false information to the reporting firms in an attempt to skew those indexes to Dynergy Marketing & Trades’ financial benefit.”

On January 26, 2003, Michelle Valencia, a former senior trader at Dynergy, was indicted on federal charges of giving false data to *Inside FERC* by the Office of the United States Attorney in Houston. She was charged with three counts of false reporting under the Commodity Exchange Act as well as four counts of wire fraud. She pleaded not guilty.

On October 22, 2002, Staff sent a data request to the 10 largest natural gas marketers and asked a series of questions regarding their past reporting practices, any internal procedures or controls they had in place, any changes they made in those procedures, and any investigations they had in progress. Staff required those companies to investigate whether they had misreported data to the Trade Press and to provide data on actual trades and reported data so that Staff could check the accuracy of those reports. Staff also investigated reporting practices of the five companies that admitted that some of their employees provided false data to the Trade Press.

²The El Paso admission came in response to Staff’s October 22, 2002 Data Request in Docket No. PA02-2 regarding the price reporting practices of the largest natural gas marketers in the United States.

manipulation. The traders provided false data in order to (1) offset the perceived dominance of Enron's input to the process, (2) benefit traders' own positions or that of their trading desk, and (3) offset the inaccuracies that other companies were reporting.

Moreover, it is clear that the traders understood the process the Trade Press used to try to filter out false data and drew on that understanding to manipulate prices by constructing phony counterparties and by keeping their false data within the range of trading, only reporting numbers that favored their position (i.e., traders that wanted to see a high price only reported high-priced trades or inflated volumes on those trades).

Dynegy

On September 25, 2002, Dynegy announced it had discovered that 15 of its employees had engaged in reporting false data to the Trade Press. Of those, seven were fired, four were given the opportunity to resign, and four were otherwise disciplined by the company. Dynegy interviewed all of its employees who were involved in reporting trade data to the Trade Press. The results of the interviews indicated that for a number of years the Dynegy trading desks systematically reported false data to the Trade Press. Dynegy states that there is no evidence of a conspiracy among the trading desks or between natural gas and power traders, that it had no systematic method in place for reporting trading information to the Trade Press, and that it has moved the reporting function to its risk management group.

The employees who provided false or inaccurate data to the Trade Press reported both monthly (*Inside FERC* and *NGI*) and daily indices (*Gas Daily*). In their reports to the monthly indices, they fabricated trades to come to a predetermined average. For the daily indices, the main method of manipulation was inflating volumes of trades.

Many of the traders stated that they felt pressure from the heads of the trading desks to report inflated volumes or prices that benefited the desk's position. One trader reported that the heads of the trading desks would instruct traders to report transactions that had not actually taken place. Another trader said the desk head told him he had to inflate volumes and report false prices. The trader stated that sometime in 2000 he was told by his boss that "this is how the game is played and you need to play it too." The trader went on to say that on one occasion, he took his trading report to his boss, who "told him to go back and do the report again, make the volume 2 or 3 times greater and make the price range higher or lower" (he could not remember which).

employee instructing other employees to submit false trades in order to serve as counterparty so the manipulation could not be detected by the Trade Press.

Staff also found evidence that a Dynegy trader and a trader at another company coordinated their numbers in order to report offsetting trades. In one case, for example, the Dynegy trader indicates an attempt to move the price at one trading point (Malin) down, and therefore only reported the low trades to *Inside FERC* (in the range of \$12 to \$12.50/MMBtu) that occurred during bid week. The other trader indicated that its actual trades were around \$14/MMBtu.

In another example, the Dynegy trader and the other trader are coordinating their data reporting to *Inside FERC* for bid week at Malin and PG&E citygate—two significant natural gas trading points in the western United States. In both cases, the traders are discussing coordinating their reporting to ensure that their false numbers are included in the index calculation.

On December 18, 2002, the CFTC issued an Order saying that it had reached a \$5 million settlement with Dynegy and West Coast Power LLC. The Order found that Dynegy had “knowingly submitted false information to the reporting firms in an attempt to skew those indexes to Dynegy Marketing & Trades’ financial benefit.”

On January 26, 2003, Michelle Valencia, a former senior trader at Dynegy, was indicted on federal charges of giving false data to *Inside FERC* by the Office of the United States Attorney in Houston. She was charged with three counts of false reporting under the Commodity Exchange Act as well as four counts of wire fraud. She pleaded not guilty.

On January 27, 2003, Dynegy issued the following statement:

The former employee was one of seven dismissed by the company since Oct. 18, 2002, after an ongoing internal investigation, conducted by the Dynegy Board of Directors’ Audit and Compliance committee in collaboration with independent counsel, discovered circumstances indicating that inaccurate information regarding natural gas trades was reported to various energy industry publications. In addition, Dynegy has disciplined seven other employees for their involvement in this activity.⁵

⁵Dynegy press release, January 27, 2003. www.dynegy.com.

Dynegy further stated that “[t]he past actions by these employees were in violation of the company’s policies as outlined in its Code of Business Conduct” and that it was “committed to fully cooperating with all ongoing investigations into these matters.”

AEP

On October 9, 2002, AEP announced that it had “dismissed five employees involved in natural gas trading and marketing after the company determined that they provided inaccurate price information for use in indexes compiled and published by the trade publications.”⁶ The inaccurate price information referred to in the October 9, 2002 announcement was for the Gulf Coast region. In response to the Staff investigation, AEP officials explained that the traders claimed to have been providing false information in order to counteract the false information being provided by marketers and traders at other companies.

On October 4, 2002, AEP began an internal investigation of its trade data reporting to the Trade Press. AEP states that it initiated the investigation in response to the September 25 revelation by Dynegy that some of its employees had reported false data to the Trade Press. AEP found evidence indicating that some of its employees had submitted false data to the Trade Press during the period from 1998 to 2002.

The traders claimed to have been instructed by their boss (the head of the trading desk) to adjust the prices and volumes of trades they had made and, in some cases, to report trades that never occurred. AEP claims that the traders indicated that they were doing this because they believed it was common practice in the industry, so their false reports were only intended to counteract false information reported by counterparties.

The traders were asked how they would know how much to manipulate the numbers they reported so as to offset what they perceived the other companies were reporting, if these companies were presumably reporting simultaneously. The traders responded that they had a feel (based on buys and sells) for the way in which the market was headed. AEP did not ask the traders whether they tried to influence the index in order to benefit their own positions. However, they did ask the traders if they ever provided information that they

⁶AEP press release, October 9, 2002.

knew in advance would be detrimental to their trading positions, and each indicated they had not.

AEP states that prior to October 2002, there was no process in place for gathering or reporting data to the Trade Press. Since its internal investigation, AEP has instructed all traders not to provide any data to the Trade Press. All trade data will go directly to the head of the Market Risk Oversight Group, who will verify that the data are accurate and then submit the data to the appropriate publications as necessary.

AEP states that it is continuing its internal investigation and cooperating with all relevant regulatory agencies (including FERC, the CFTC, and the SEC) as well as the U.S. Department of Justice. AEP further states that it has moved the market data reporting function from the trading desks to the risk management office.

Williams

On October 25, 2002, Williams announced it had learned that a few traders in its natural gas trading business provided inaccurate information regarding natural gas trades to an energy industry publication that compiles and reports index prices. Williams stated that the inaccuracies were discovered during an independent, internal review of its trading activities.

Williams hired an outside company to conduct an internal investigation of its price reporting. Williams' investigation of the West found no evidence that the daily data provided to *Gas Daily* over the phone were inaccurate. However, the investigation did find that the monthly data reported to *Inside FERC* were inaccurate. Specifically, it found that in a number of instances the volume of trades reported to *Inside FERC* exceeded the actual volume of Williams' trading activity.

In response to the Staff data request, Williams offers the following explanations for the discrepancies: (1) the belief that *Inside FERC* expected Williams to report not only transactions to which Williams was a party, but other transactions occurring during bid week; (2) the reported transaction dates do not necessarily correlate with dates in Williams' database; (3) the reported delivery points do not necessarily correlate with delivery points in Williams' database; (4) ambiguities caused by *Inside FERC*'s requirement that numbers be rounded; (5) the evolving nature of the *Inside FERC* form, which purported to narrow the categories of transactions about which information was

sought over time; and (6) *Williams' traders' reporting of inaccurate information* (emphasis added).⁷

The review found that some Williams traders manipulated the data they provided to the *Inside FERC* spreadsheet. They stated that they were doing this because significant market players (Enron and El Paso) were submitting a great deal of false trade data that were outside the range of prices that were actually trading, and they were trying to offset this false reporting. In addition, they wanted to show the Trade Press that they were players in the market. The traders also claimed that everyone in the industry, as well as *Inside FERC*, knew that this activity was taking place. They further stated that they believed the Trade Press was able to ferret out the most egregious misreporting and arrive at generally accurate priced indices. Williams has stopped reporting market price data to the Trade Press.

Williams did, however, find evidence of deliberate attempts to manipulate the published price indices in the Northeast. In each case, Williams found recorded telephone conversations indicating that editors of the Trade Press were questioning the accuracy of the trades reported by Williams' traders.

In one case, a reporter from *Gas Daily* indicates that there were very few reported trades for that trading point, so the trades reported by Williams changed the index by up to 10 cents per MMBtu. The reporter from *Gas Daily* indicates that he was getting numerous complaints about the published index price and requests counterparty information so he can cross-check Williams' reported numbers, but the Williams trader refuses to provide counterparties due to confidentiality concerns.

In another case, a trader is asked by an editor from *Inside FERC* to provide counterparties for the reported transactions that are on the high end of the reported range and appear to be questionable. The trader makes up counterparties, but when the editor cross-checks with the reported counterparties, they deny being involved in the transactions.

In addition, an analysis of the financial positions of the Williams trading desks indicates that the trading desk profited from the movement of the prices.

⁷December 13 Response at 5.

El Paso analyzed the accuracy of its reported data for its Western trading desk by comparing what was reported to the Trade Press with the actual deals captured in its information system for 728 fixed-price trades that took place between October 2000 and December 2001. El Paso found that approximately 80 percent of the transactions they analyzed were perfectly matched, meaning the price and volume reported were exactly the same as the actual price and volume. Of the 20 percent (145 trades) that were not perfect matches, 23 reported transactions had the same price but a volume different from the actual transaction. El Paso explains that 115 of the remaining 122 trades were within 5 percent of the high and low trading range of the NYMEX during the 3-day period comprising 2 business days prior to, and the day of, the NYMEX settlement for each particular month, plus the published basis index for that month at a particular pricing location.

An analysis of El Paso's reporting for the rest of the country (the Northeast, Mid-Continent, and Gulf trading desks) shows far less accuracy in the reporting than in the West. As shown in Table III-1, the percentage of exact matches between actual trades and reported trades was 1.2 percent, 1.0 percent, and 0.5 percent for the Northeast, Mid-Continent, and Gulf trading desks, respectively. That is, for these regions, approximately 99 percent of the reported trades did not represent actual trades conducted by El Paso.

The volumes of the trades are also shown in Table III-1. For these three trading desks for the period July 2000 through December 2001, El Paso traded 640,568,790 MMBtu of fixed-price physical gas. For illustration, if the average price of the gas were \$4/MMBtu for the period, then the value of the gas would be approximately \$2.5 billion. So, El Paso misreported 99 percent of the prices on trades worth over \$2 billion. In addition, as discussed earlier, the published indices are the basis for billions of dollars of financial derivative contracts as well as physical and financial electricity contracts.

On January 13, 2003, El Paso updated its disclosures regarding price reporting to the Office of the United States Attorney in Houston. El Paso disclosed that it had found further instances of inaccurate reporting to the trade publications. On January 16, 2003, representatives from El Paso and the outside counsel performing the investigation briefed Commission Staff on its findings.

The investigation uncovered evidence that indicated there was systematic price manipulation occurring at El Paso. Specifically, prior to October 2000, El Paso reported data according to its "book bias." Staff understands that "book bias" refers to El Paso's trading position. In other words, in reporting according to the book bias, if El Paso had a long position it would report high prices and if El Paso had a short

In October 2000, El Paso reported accurate numbers but the evidence indicates that El Paso desk heads, traders, and management considered whether to continue reporting accurate numbers or go back to reporting the book bias. The evidence shows that many of the traders, desk heads, and managers recommended going back to reporting the book bias. The data in Table III-1 strongly suggest that for those regions, El Paso did indeed go back to reporting its book bias for the period from November 2000 to December 2001.

El Paso states that it has stopped reporting trading information to the Trade Press.

Staff Reaction to the Admissions of False Reporting

Staff expressed concerns about the accuracy of the published price indices in its Initial Report. At that time we had no conclusive evidence that anyone had actually manipulated the published price indices. We argued that, due to the generic problems with the price reporting process and problems specific to the California Border gas indices, many companies had the incentive and ability to manipulate the indices. The admissions (described above) by five significant energy trading companies (Dynergy, AEP, Williams, CMS, and El Paso) confirm our concerns. Particularly troubling is the common theme that because everyone knew that everyone else was manipulating the indices by reporting false prices and volumes, it was somehow acceptable and even necessary for this to take place. Whether the intent was to influence an index in order to favor its positions or to somehow offset the false information being provided by others, the traders of these companies were deliberately manipulating the published price indices by providing false data to the Trade Press. In addition, in many cases the heads of the trading desks were aware of the manipulations; in some cases, they were orchestrating the manipulations.

Many traders said they were attempting to manipulate the index prices in order to offset the attempts at manipulation by others. The AEP traders were asked if they ever provided information that they knew in advance would be detrimental to their trading position, and each indicated they had not. The obvious followup question, which was not asked by AEP (or at least not reported by AEP), is whether they ever provided information that they knew in advance would be good for their trading position. In general, the traders from the companies that

companies were reporting, and (4) replicate the prices they perceived to be the true range and average of the market. Staff concludes that, at least in some cases, the false reporting was done to favor the traders', desks', or companies' financial position. In fact, the CFTC has concluded that Dynegy "knowingly submitted false information to reporting firms in order to skew those indices to Dynegy Marketing."

In some cases, the traders understood the process the Trade Press used to try to filter out false data and drew on that understanding to manipulate the prices by constructing phony counterparties and keeping the false data within the range of trading, but only reporting numbers that favored their position (i.e., traders that wanted to see a low price only reported low trades or inflated volumes on those trades). In some cases the traders claim they were unsure of what the Trade Press was looking for, so they would report a mix of real trades, observed trades, and fabricated trades that reflected their sense of market conditions.

Duke Energy Trading and Marketing

Duke Energy Trading and Marketing (Duke) performed an analysis of the correlation between the data reported by its Salt Lake City office (West trading desk) to the Trade Press and the actual trade data recorded in Duke's database for its western United States transactions. The analysis found that for monthly transactions, 95 percent of the reported trades matched the recorded trade on price, 93 percent matched on volume, and 92 percent matched on both price and volume. For daily transactions reported to the Trade Press, 88 percent of the reported trades matched the recorded trade on price, 82 percent matched on volume, and 78 percent matched on both price and volume. Stated another way, 8 percent of the reported monthly trades were inaccurate in terms of price, volume, or both, and 22 percent of reported daily trades were inaccurate in terms of price, volume, or both.

Duke interviewed its Salt Lake City traders to try to understand why there would be occasions when the recorded trade and the reported trade did not match completely. The reasons offered by the traders included (1) some small-volume trades were excluded from the reporting, (2) some trades occurred after the office's reporting deadline of 1:00 p.m. (Mountain Time), (3) the inadvertent failure to attach a list of online trades to the form that was faxed to the Trade Press of daily gas indices, (4) a trader's use of "an eyeball estimate" of a weighted average price for transactions that were reported on an

aggregated basis, and (5) a trader's reporting of an intracompany trade that was normally excluded. Duke concludes that for the vast majority of its trades, the Salt Lake City office reported its actual transactions to the Trade Press and there was no trader intent to manipulate the indices.

Duke did not perform a similar analysis for its eastern United States transactions because "DETM's Houston office reported to the Trade Press data for indicative transactions on broader market information than just its transactions."¹¹ That is, because Duke reported trades that it observed in the marketplace, it would not be expected that the reported data would correlate highly with recorded transaction data.

In addition, Duke provided Staff with electronic records of the spreadsheets it used to record the range of trades and volume-weighted average that it sent to *Gas Daily*. Examination of these spreadsheets shows that Duke calculated its volume-weighted average by taking the simple arithmetic average of its high and low trades for the day. Therefore, even if the Duke traders were trying to report accurately, they were not. Calculating a volume in this manner would not create a systematic bias in either direction (that is, tending to systematically overstate or understate the volume-weighted average); it provides another source of inaccurate price data that is reflected in the published price indices.¹²

Duke did find significant inaccuracies in its reporting by the Mid-Continent, Gulf, and East trading desks, all located in Houston. Unlike traders in Salt Lake City, who reported on actual trades, the Houston traders reported their "sense of the market." The reporting was done by the physical gas traders, who generally received the data from management and the financial traders. The investigation has found that the management and financial traders sometimes biased the reported numbers to favor the trading desk's financial position.

Duke contends that by providing a "sense of the market," the traders thought they were providing what the Trade Press was looking for. Staff finds this argument unpersuasive because, for monthly prices, *Inside FERC* was explicit in its description of what it needed for its monthly index—actual fixed-price physical natural gas trades, not a "sense of the market" or basis or financial trades.

¹¹Duke response to October 22 Staff Data Request, November 8, 2002.

¹²If the distribution of prices was perfectly symmetric about the mean price, then the volume-weighted average would be equal to the simple average of the high and low trade. There is no reason to believe that would be the case with any regularity.

Duke states that most of the senior management in the Houston office, including all who participated in the inaccurate reporting, are no longer with the company.

Duke states that its internal review indicates that the process of reporting natural gas market data to the Trade Press was informal. Duke claims that much of the informality was due to a general lack of understanding by Duke regarding what the various publications were seeking. Duke states that it has implemented new compliance procedures, under the direction of its chief risk officer, to ensure the accuracy of the data reported to the Trade Press.

Coral Energy

Coral Energy (Coral) interviewed all employees who provided data to the Trade Press. Coral has concluded that “the information it provided to the Trade Press accurately reflected then current market information.” Coral described the type of information each trader (or other employee that provided trade data) gave the Trade Press. For both daily and monthly data, many Coral traders provided prices and volumes of (1) actual trades they had entered into, (2) trades they heard had taken place in the market, and (3) trades they had seen on trading platforms, including EOL.¹³

Coral does not address the seemingly obvious problem with reporting prices and volumes of trades that traders had “heard about” or “seen on electronic trading platforms.” If a trade on EOL was witnessed by 100 traders, that does not mean the trade happened 100 times. However, if the industry practice was to report prices and volumes of trades that had been observed or heard about, then trading volumes were overstated and those trades made on EOL (the most widely observed trading platform) carried undue influence on the published price indices. Staff described the influence of EOL in the gas market price formation process, especially the Southern California Border daily market, in the Initial Report. The fact that traders were reporting trades they saw on EOL, sometimes misrepresenting them as their own trades, is another way EOL influenced the published indices. As stated throughout this chapter, many large traders used the same sort of “survey” reporting described by Coral.

¹³Some Coral traders only provided data on trades they had actually made.

Since October 2002, Mirant has implemented a formal process for reporting information on natural gas transactions to the Trade Press. Mirant now directs all calls or contacts from the Trade Press to a designated employee in the Risk Control department who is responsible for collecting responsive data from Mirant's actual trading records for submission to the publications. Moreover, since October 2002, records are being kept as to data requested and data submitted.

BP Energy Company

BP Energy Company (BP) provided records for trading data reported to the Trade Press by fax or e-mail. BP states that during the period in question, it provided natural gas prices and transaction data to the Trade Press on spreadsheets containing information drawn or downloaded directly from the transaction support system. BP had a formal system in place for reporting transaction data to the Trade Press that included assigning the responsibility for reporting to a single trader with oversight and accountability from the trading managers.

BP could not provide records of the data reported to the daily publications over the phone. BP states that any information reported over the phone came directly from daily deal sheets. BP's internal price index reporting policy requires all discussions with third-party publications to be limited to the designated representative, with the trading managers serving as backups.

Reliant

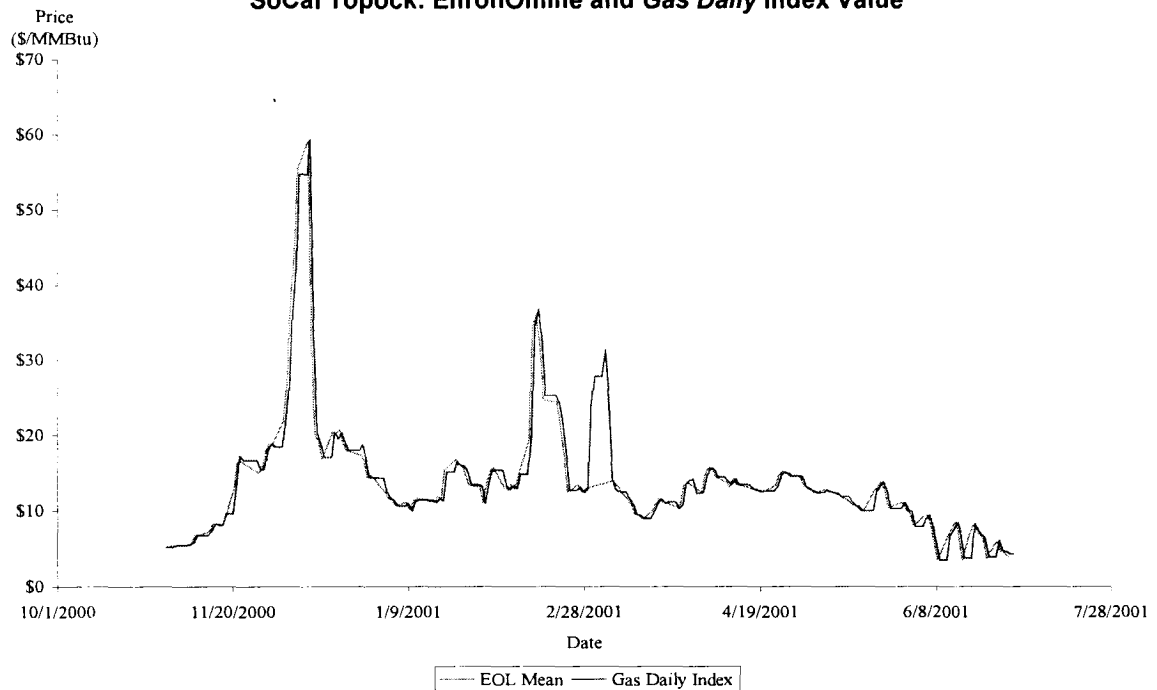
For daily price reporting (*Gas Daily* and NGI), Reliant reported daily trading by fax to the Trade Press. Each day, traders would pass a daily worksheet around the trading floor and one or more traders would handwrite information on trading points with which they were knowledgeable. Some traders reported pricing for Reliant trades; others also reported other trades observed in the markets. At 2:30 p.m. each day, a Reliant analyst would fax the worksheet to the Trade Press. Reliant states, "[t]he worksheet was not reviewed by a supervisor or another employee before it was transmitted."¹⁴

Reliant used different monthly price reporting procedures at its various trading desks. It has almost no record of the West desk's reporting (it found a single spreadsheet from the Denver office). However, Reliant

¹⁴Reliant response to October 22 Staff Data Request at 4.

4. Traders used EOL for price discovery, so the price of off-EOL trades was influenced by EOL.

Figure III-1
SoCal Topock: EnronOnline and Gas Daily Index Value



As shown in Figure III-1, the *Gas Daily* price almost perfectly tracks the EOL price. In the Initial Report, Staff focused on one trading day, January 31, 2001. On that day, total trading volume at southern California Topock reported to *Gas Daily* was 6,766,000 MMBtu, which was the busiest trading point for that day. The total volume on EOL for next-day Topock gas for the day was 2,240,000 MMBtu. At the time of the Initial Report, Staff did not know the extent to which the reporting of trading volume was manipulated by the traders. The total volume of trading on EOL for the day (2,240,000 MMBtu) is actual trading verified by Staff. The total volume reported by *Gas Daily* (6,766,000 MMBtu) cannot be verified because *Gas Daily* has not revealed its data. Moreover, as described above, most companies spoke to *Gas Daily*'s editors over the phone and did not keep records of what they reported. Staff suspects that of the 6,766,000 MMBtu reported by *Gas Daily*, much of it was based on trades observed on EOL in addition to the actual trades made on EOL. Finally, as noted in the Initial Report and discussed in Chapter II, more than 75 percent of the trading on EOL that day was with one trader from Reliant. Thus, the volume reported and the observed activity on EOL give the illusion of a much more liquid market than was actually present.

other times it was the simple average of the high and low trades. Some traders received phone calls, some called the Trade Press, and some faxed prices and volumes. Staff inspection of the faxes shows that there was no standardization of the data reported to the Trade Press. In some cases volumes and average prices were reported, some had individual trades, some showed basis differentials, and some were financial rather than physical deals. Because most of the reporting was done by phone, there are significant barriers to finding out what the traders actually reported to the Trade Press. As with *Inside FERC*, the editors of *Gas Daily* assert First Amendment protection, so there is no way to ascertain what they were told and their awareness of the extent of the manipulation. Moreover, the companies themselves were unable to re-create their daily reporting because (1) it was done by phone and the phone calls were not always recorded (even if they were recorded, it would take thousands of hours to listen to the recorded calls) and (2) the Trade Press denied companies' requests for their own data, citing confidentiality and First Amendment protection.

In short, the responses indicate that the reported price indices were based on data that were confusing, inaccurate, misleading, and often false. Staff concludes that an accurate index could not have resulted from the data that were reported. In addition, because the Trade Press has not revealed their data, there is no way to verify the accuracy of the reported indices by comparing them with the data reported to the Trade Press.

Staff Attempts To Verify the Accuracy of the Reported Indices

As part of the investigation, Staff attempted to verify the accuracy of the reported price indices; however, there have been significant barriers to this process. First, in many cases the companies cannot reproduce the data they reported to the Trade Press for the reasons described above: daily reporting was done by phone, often on unrecorded lines; many traders reported their own trades along with those they observed in the market; and records of the reported data were not maintained because there was no formal process for reporting the data. In addition, the Trade Press has not revealed the data used to calculate the indices.

One of the issues that became apparent to Staff while investigating Enron and other energy traders is that they lack many business records that are essential when investigating allegations regarding trading activities. Because the companies have argued that their trading

activities are not jurisdictional to FERC, CFTC, or SEC, many fail to keep records that would be required of a regulated company. For example, maintenance of phone tape recordings can be haphazard at these companies. Staff found evidence indicating that Enron had received a legal opinion finding that their 4-month tape retention policy was not in compliance with FERC regulations. During the same time that Enron received this finding, they were reducing their retention to 30 days. Although the retention of phone tapes in the power industry is an accepted practice, the length of retention varies. Specifically, the lack of record keeping, especially recorded telephone conversations, made it difficult and, in some cases, impossible to verify the data provided by the companies to the Trade Press.

As described earlier in this chapter, Staff analyzed the trading data of six major gas purchasers in California and compared them to the published price indices. The analysis uses data submitted under Docket No. EL00-95 by David Reishus and Patrick Wang of Lexecon Inc. on behalf of five companies involved in that proceeding (Duke, Dynegy, Mirant, Reliant, and Williams). The database they used included spot transactions from six companies: Coral, Duke, Dynegy, Mirant, Reliant, and Williams. Staff found that for those six companies during that period, their fixed-price purchases were systematically lower than the published index prices (which are supposed to be based on that type of transaction only).²¹

Industrywide Reporting Issues

As described in the Initial Report, the industry relies on both daily and monthly natural gas price indices. The monthly price indices are based on fixed-price transactions occurring during bid week. During the course of the investigation, it became clear to Staff that transactions occurring during bid week do not give an accurate picture of the monthly natural gas trading activity. A number of large traders (e.g., Dynegy, AEP, and Williams) stated that they did very little fixed-price trading during bid week. They stated that they mainly traded indexed contracts or small fixed-price deals designed to fine tune their physical and/or financial positions for the month. Data provided from the large natural gas traders and marketers confirm this position. In fact, traders said that one of the reasons they fabricated the prices and volumes they provided to the Trade Press was that they had very few trades during bid week and they wanted to reflect their actual trading activity for the month. Another problem with reporting bid-week trades only is that

²¹See Table III-2 on page III-17.

- ◆ El Paso Merchant Energy
- ◆ Williams
- ◆ Reliant
- ◆ Duke
- ◆ CMS
- ◆ Mirant
- ◆ Coral
- ◆ Semptra Energy Trading

At a minimum, these companies need to show the following:

- ◆ Those employees, including trading desk heads and managers, who participated in manipulations or attempted manipulations of the published price indices have been disciplined.
- ◆ The company has a clear code of conduct in place for reporting price information.
- ◆ All trade data reporting is done by an entity within the company that does not have a financial interest in the published index (preferably the chief risk officer).
- ◆ The company is fully cooperating with any government agency investigating its past price reporting.

Conclusion

The process for reporting natural gas price indices was fundamentally flawed and must be fixed. Traders had the ability and incentive to manipulate the published indices and they did so. Given the degree of systematic manipulation described in this chapter, the published indices could not possibly be accurate based solely on the publishers' editorial judgement, the traders' feel for the market, or the hope that competing traders could offset each other's false reporting.

Staff began the investigation looking for evidence of energy price manipulation in the West. Staff found evidence of manipulation (direct and indirect) of the published natural gas price indices at significant trading points all over the United States—the U.S.-Canada border in Washington (El Paso), Oregon and San Francisco (Dynergy), the Gulf Coast (AEP), the Great Lakes (CMS), the Northeast (Williams), the Henry Hub in Louisiana (Enron), and the Southern California-Arizona Border (Enron and Reliant).